



# Broader Understanding of Gamification by Addressing Ethics and Diversity

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**Abstract.** The engagement achieved from gamification is a phenomenon, as gamification is being seen nowadays in a lot of industries. One reason for the massive popularity of gamification is that the use can provide easy access to a sense of engagement and self-efficacy which otherwise may not deliver. By its nature, gamification present users with challenges to overcome and use narrative structure, visuals, strategic elements, and game rules to motivate the users. Gamification is widely applied to increase user engagement, but many empirical studies on effectiveness are inconclusive, and often limited to the integration of tangible game elements such as points, leaderboards or badges. In this article, we will discuss two different perspectives: (i) Ethics: Exploitation, Manipulation, Harms, and Character (ii) Diversity: Culture, Gender and Age. The discussion will lead to opportunities for professionals and researchers to acquire relevant knowledge, assess the mechanisms for the integration of gamification in the context of meaningful engagement, and outline challenges and opportunities for further research.

**Keywords:** Ethics · Exploitation · Manipulation · Harms · Character · Diversity · Culture · Age · Gender

## 1 Introduction

Gamification - the use of game elements in non-gaming settings to increase user engagement and improve performance [1] is widely applied to transfer the motivational pull of games and increase user engagement with otherwise monotonous tasks [2]. While there is growing empirical evidence of the general effectiveness of gamification [3], many studies only report small effect size or omit further statistical analysis [4]. Additionally, our understanding of underlying mechanisms remains limited, with recent large-scale studies returning inconclusive results. For example, [5] found that the inclusion of badges, levels and leaderboards influenced user performance, but had no significant effect on perceived competence and intrinsic motivation. Taking a slightly different perspective, [6] included a wider range of game elements and features (e.g., simulated teammates, avatars, and narrative). Results show that aspects such as teammates do not only affect productivity, but also the underlying experience.

Furthermore, using games as a vehicle to deliver cognitive training may also be advantageous simply because video games appear to have positive effects on a number of outcomes, including working memory, attentional capacity, problem solving, motivation, emotional control, and prosocial behaviors [7]. In essence, delivering targeted cognitive training through a video game medium might provide a range of benefits.

The studies we reviewed were generally enthusiastic about their use of gamified tasks, although given the diversity of study aims, this does not mean that all games worked as expected. The ones that measured intrinsic motivation reported that the use of game like tasks improved motivation, compared with non-gamified versions. For instance, in the study conducted by [8], they identified 21 of 33 studies that compared a game like task directly against a nonqualified counterpart, and these studies can shed light on the specific effects of gamification on testing and training tasks.

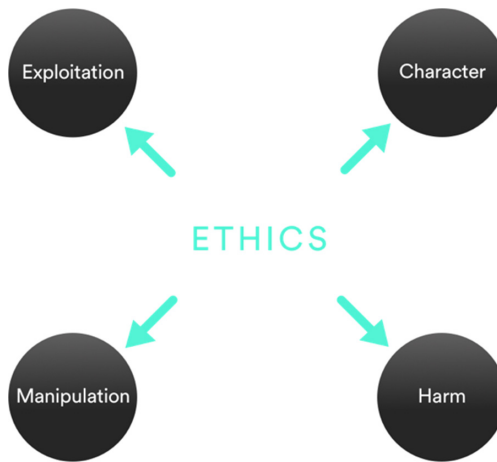
## 2 Related Work

Gamification's promise to bring the motivational and fun characteristics of games to other contexts is very appealing to businesses. Bringing an element of fun to otherwise boring or uninteresting jobs and tasks certainly seems ideal [9]. Critics say that gamification is manipulation; at least that is what many people think [10]. Because gamification is a powerful tool for modifying behaviors, how do we consider ethics specifically for gamification driven engagement?

A prevalent interpretation of Ethics a gamification, was introduced and promoted by the game designer Ian Bogost as exploitationware. The Bogost definition describes gamification sell technique invented only to sell products rather than produce real engagement [11]. Another term used for describing gamification is Pointsification coined by game developer Margret Robertson. Robertson claims that pointsification creates challenges that require time and energy but are not fundamentally satisfying [12]. Bogost [13] are not the only people that have criticized gamification. Critics have questioned of gamification on a variety of reasons [14–17]. Although Werbach and Kim [18] claim the critique of gamification has reacted to behavioral design methods that are often imprecise and declaring that practically all forms of gamification are impermissible or inappropriate. While there exists a discussion the ethical issues of gamification [16, 19, 20] in academia, there is still silence from many professionals. According to Werbach and Kim [18], there have been insufficient serious studies of the ethical issues of gamification given that gamification is one of the fastest developing behavioral tools in both business and information technology.

## 3 Are Ethics Important in Gamification?

Ok, what's the problem? Gamification has teething just like any other new and disruptive method. To design really engaging gamification it doesn't hurt to make it right from the start. In their research on ethics and gamification Werbach and Kim [18] identifies four distinct areas: exploitation, manipulation, harm, and character of consideration when it comes to designing as well as researching gamification. The areas should in themselves require an article, however, herein they are shortened, summarized and reproduced from this article's perspective (see Fig. 1).



**Fig. 1.** Understanding ethics using gamification

### 3.1 Exploitation

The first theme that Werbach and Kim [18] identifies is exploitation. Many organizations ask for loyalty – employers want workers to be loyal, and brands want a reoccurring loyal customer base. Gamification has an impressive past performance regarding producing loyal users. Nevertheless, what if the gamified system gives almost nothing in return, like virtual goods? At least frequent flyer programs or loyal customer systems often give something tangible back to the user. In video games, players sometimes endure boring activities to achieve particular long-term objectives, like picking an endless number of herbs in the MMO (massively multiplayer online) game *World of Warcraft*, even if the players do not find an endeavor itself rewarding.

But, if the players do not think the task rewarding, why are they doing it? This game element is called grinding and is prevalent in MMO games. To grind in a game means that the players must spend extended periods doing monotonous tasks as a condition to acquire something, often a virtual good, the player desires – like an honorary title, a special badge or even some equipment they can use in the game. One of the ideas behind the grinding element is to make a game feel more prominent without the game developers putting much effort into producing new complex game material - like a new world or another set of scenery. However, doing grinding in a game is optional and can even result in some new equipment for the players to use in the game context.

Conversely, when this game element is applied in, e.g. a gamified work environment, it is often not optional, and there seldom exists a magical work-tool that is rewarded to the employees at the end of the grinding work-session. Getting a virtual badge for taking on an extra shift or working unpaid overtime is not ethical. The employer is capitalizing on the employee's will to appear respectable and loyal towards the company, and this could be viewed as exploitation if the employees never receive a tangible reward for their extra effort. Correspondingly, social pressure could correspond to exploitation and culture of the company. Individuals, especially newly employed, seek to conform with the work culture, which involves changing their typical behaviors in order to fit in or go

along with the new individuals, employees, around you [21]. Creating an “if everyone does it, why shouldn’t I?” mentality.

### 3.2 Manipulation

Gamification is a design technique to affect the user’s behavior. Swaying individuals’ determination has been a sales trick since humans first barter and have been used ever since with different sell techniques. That salespersons use calculating methods is not new. Grown individuals know this when we are entering a store, and we have time to prepare for an upcoming sales pitch. However, in environments where individuals usually are not prepared for a sale situation, e.g. in nightgowns lying in bed at 10.00 PM playing a social game on the smartphone, should it not be considered more manipulative? Werbach and Kim [18] place in the manipulation category social, mobile games such as Farmville using different game mechanics to manipulate players to a continuous play up to a point then all of a sudden if you want to continue you have to pay with real money. Werbach and Kim [18] reason that these game company’s target different intensive and almost obsessive players, called whales, and rely upon them spending heavily for either continuing the game or purchasing different virtual goods. Although not all individuals will become addicted to mobile games, it does not justify behavior that targets vulnerable customers – such as children. Many of these applications have a PEGI 3 nevertheless in, e.g. Candy Crush Saga there are options to buy virtual goods with a price range of 0,7 to 159 euros per object [22]. There exist many explanations of why parents allow this, like indulging the children or to avoid spam [23].

If a gamification design deliberately or negligently applies techniques to promote irrational behavior or even fails to act corrective when some users display such behavior, it falls short of ethical duties regarding manipulation. This category calls for better transparency from the system that uses gamification.

### 3.3 Harms

Concerning harm, Werbach and Kim [18] divide this theme in two aspects psychical and psychological.

The physical aspect could be connected to exercise, and workplaces were gamification, if it is designed in such a manner, encourages pushing the user of the gamified system to the limit. In a gamified exercise or a diet application, there could exist, certainly kindly meant in the design, push notes, social media functions or competitions that do not concern the user’s previous health conditions which could result in exercise injuries or eating disorders. In a gamified work situation, e.g. a call center, there could exist problems with overworking for the employees.

The psychological aspect of harm, the theme has to do with the sensation being watched and measured an information system. Making gamification design work as Jeremy Bentham’s Panopticon, a philosophical prison concept with the design to allow all convicts of an institution to be observed by a single guard, without the prisoners being able to know whether they are being watched or not [24]. This could make the gamification design functions as a suppression medium that imposes the interests of managers over the interests of the employees. Similar problems have been identified in

previous research concerning socio-technical systems in organizations [25] and can also be found in China's social credit system [26].

The ethical theme of harm could be exemplified by a gamification system that Disney implemented to their cleaning staff in one of the Disneyland hotels in Oregon. In the gamified design, points were awarded to employees when they did different task like finishing cleaning a hotel room. The accumulated points put the different employees on a leaderboard, visual at the staff lunchroom. This competition became so intense it made the employees stop taking lunch breaks or going to the toilet. The reason for this was that the employees thought that they were going to lose their jobs if they did not climb the leaderboard continuously. The employees, in interviews, were calling the gamification implementation the electronic whip [27]. This gamification could be harmful both in a psychological sense - involving stress from the impression that always being watched and measured by your performance, as well as a physical way - involving injury from overworking. Werbach and Kim [18] also a reason that this type of gamification is humiliating for the practitioners.

### 3.4 Character

Werbach and Kim [18] define this area with the appeal to moral and fundamental of human values.

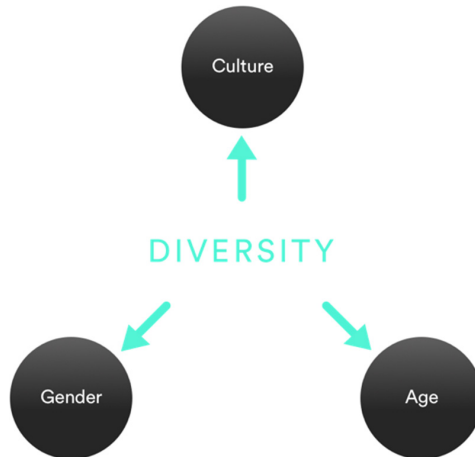
Gamification could be designed to get the user to make amoral choices regarding human rights which they probably would not have made without the gamified system. Werbach and Kim [18] exemplify these two military examples concerning military organizations such as the U.S. Army and the Israel Defense Force using gamification in civilian society as well as training. The Israel Defense Force used gamification, not in a military training simulation, but in civil society using a gamified blog where readers acquired badges and when they searched for information on the blog and shared the content through social media connections. With the use of social media, this blog became viral [18]. This was made to rally support for military actions conducted by the Israeli Defense Force.

In the case of the U.S Army, gamification was used in a training simulation that rewarded the participants with points and achievements when tapping colleagues' email or finding contraband. This simulation was conducted to exercise the fight against global terrorism [18]. Both gamified cases are questionable regarding the right to privacy or by making civilians spread military propaganda, and the game facilitates the actions. The character theme is referring to the concept of frames that a gamified system purpose – is it a game or is it a reality. Previous research on gamification in higher education purpose that when a learning management system is gamified there exist a possibility that the user does not refer to it as a serious system, even though it is in a serious context. They see it through a more playful frame [28].

## 4 Situating Diversity in Gamification

Gamification is a double-edged sword. While increasingly pervasive gamified systems create unlimited opportunities for a better quality of life, their domination can cause

a negative effect on societies as in; Rewards for achievement, measure progress and provide feedback – strong motivators for behavioral change, learning and growth [29]. This article aims to raise awareness about three distinct diversity elements that will be approached and analyzed; Culture, Gender and Age (see Fig. 2).



**Fig. 2.** Situating diversity in gamification.

#### 4.1 Culture

To acquire the meaningful engagement out of gamification and its application in business, learning, and health, both gamification researchers and professionals need to consider how different cultural manifestations are influenced by the behavioral design that gamification purpose. Al Marshedi, A., Wanick, V., Wills, G. B., & Ranchhod, A. [30] suggest that the cultural context and the cultural environment are of interest for gamification. The individuals and their cultural context need to be considered as well as understood by the gamification researcher and the professional. Correspondingly, Khaled [31] describes the need for cultural models to understand the engagement in gamification better.

However, as of today, there is limited research on the gamification and culture area [30]. If gamification should consider culture as an aspect of the design to engage, there is a need to explore other fields. It should be valuable to explore culture and gamification. The word culture has many definitions, from a social science standpoint Giddens & Griffiths [32] describe it as “the ways of life of the individuals of a society, or of groups within a society. It includes how individuals dress, their marriage customs, language and family life, their patterns of work, religious ceremonies and leisure pursuits”.

Giddens & Griffiths definition would be beneficial to understand for gamification professionals and researchers alike. Understanding the client and/or the end-user’s culture in gamification means there is a need for consciousness regards to the design and interpreting the outcome of a design based on the cultural context. E.g. if a gamified

onboarding program is to be designed and implemented in a global manufacturing company, it needs to consider the different cultural spheres regarding, e.g. work culture, family traditions and/or national norms.

The cultural discussion on engagement and gamification opens for a discussion on how concepts and knowledge from cultural psychology are beneficial for the field of gamification. Cultural psychology takes into consideration a great many things that like cultural collective attributes, cultural emotional attachments, communications understanding and the culture of decision-making [33]. Cultural psychology is beneficial in regard to design gamification avoid, e.g. avoid stereotyping, but also when researching gamification in cultures with high values in either self-enhancement or self-improvement. Actions that affect behavioral change do not happen in a cultural or social vacuum. Many activities that individuals react to in their everyday life have some cultural nuances or are moderated by the home culture or job culture [34].

There are cultural norms that would react opposable on a gamification design in the Scandinavian countries, there is something called the law of Jante (swe: Jantelagen, no/dan Janteloven) which could be described as a code of conduct that portrays not conforming, doing things out of the ordinary, or being overtly personally ambitious as inappropriate. One should never try to be more, try to be different, or consider oneself more valuable than other people [35]. This widespread modesty code could make people react negatively on a gamification design the push a sharing behavior in social media. The law of Jante is unsaid in the Scandinavian societies, but its prevalent in all its stages. Khaled [31] claims that unwritten cultural rules are needed to reflect upon when designing gamification. Here the field of anthropology would be needed to grasp the understanding the law of Jante. This is an example of culture that a gamification professional or researcher need to pay attention to. Additionally, to make the cultural aspect more complex the use of cultural semiotics, metaphors and tropes could play essential roles for engaging a user in gamification design.

## 4.2 Age

Another diversity aspect in the gamification that needs attention is age. Age has been proven to contribute to the digital divide. But does this compare with gamification? Gamified products on the market has tendency to be designed with a young adult user in mind, and therefore it could be perceived that this user group are more attracted to gamification [36]. However, this assumption may not necessarily be accurate. Studies indicate that the consumer of a gamified product presumed usefulness of gamification decreases over the years, but this does not mean that this is the actual case. In a study of the supposed usefulness of gamification display that gamification appeal more to individuals under the age of 40 [37]. However, in another study, age difference concerning motivation in a gamified exercise software has been assigned insignificant effects [36]. The findings could indicate that gamification has a similar effect, regarding age, on motivation but the difference is determined on how the gamified product presents its use of game mechanics. A gam-y look and feel in the product design makes it more attractable to a younger crowd.

Research on acceptance of serious games could work as a guide for how to navigate in the design field in regard to age. The research field of serious games has studied the well-known factors, such as perceived usefulness, perceived ease-of-use and perceived

enjoyment that play a vital role in the acceptance of a system [38]. To consider is that the users' attitudes to gamified products need not be about gamification, but the digital divide between younger and older generations [39, 40]. The knowledge of age diversity is crucial when designing or examining a gamification design. To know the target group that is expected to be engaged is needed, not just for an engaging gamification design but when designing in general. Interesting findings could be examined from the viewpoint of gamification in an e-scape perspective were the viewpoints of environmental psychology is used [41]. A lens that should be used to analyze how gamification work and why it works – there need to be more studies in the area in regard to age.

### 4.3 Gender

Diversity regarding end-user gender is also a central topic of engagement. Is there a difference between genders when it comes to engagement and gamification?

In the business of game development many of the entertainment games designed, both digital games and analog games, acknowledge that there is a gender difference and therefore the games are designed with a specific gender in mind [42]. Correspondingly, gender has been found to play a role in game-based-learning context [43]. In a study on medical student attitudes toward video games and learning, [44] showed that female students in higher education were about 35% as likely as male students to enjoy the competitive aspects of the games.

However, gender differences concerning the attitude of video games seem to correlate with age of the user [43]. Younger generations are more accepting of video games and do not seem to gender code the gaming activity as much as the older generations [43]. However, boys usually have more positive attitudes towards video games in education than girls [45]. Gender differences have also been observed during gameplay in an educational context, where the different sexes have different player behavior [46]. Does gender attitudes on video games and game-based learning correlate to engagement in gamification? This is a complex problem, with multiple answers.

One of the largest fields of use for gamification is education and the teachers play a vital role in the acceptance of the design. In the higher education context, attitudes towards using gamification in the learning institutions have no significant affected by the teacher's gender [43]. The study indicates that attitude towards using gamification doesn't seem to be affect by gender. Nevertheless, there are indications that in elementary school context, the effect of gamification on the user is affected by gender. The game mechanics, points, badges, levels, was used to boost good behavior in a school class. Pedro et al. [47] found that game mechanics had different effects on the girls and the boys in the class. In their study, the gamification design seemed to have a better effect on the male population than the female [47].

Though, does gender diversity correlate in a more adult gamified context?

In a study observing simulated corporate training show that there is a gender diversity regarding how gamified competition in learning context affects males and females differently. Males are more engaged and have improved learning in a competitive context than females [48]. The finding of this study implicates that gender plays a role in gamification design at least when it comes to the competitive aspects of gamification.



Moreover, a study on university undergraduates, several gamification designs were tested in the relevance of different game mechanics to determine experienced perceived playfulness and if the mechanics was perceived differently by gender. The study shows that there exists a diversity what males and females perceive as playful in a design. Males seem to appreciate points although women report a higher enjoyment in the game mechanic badges [49]. In another study on a gamification framework based on user characteristics, there is an indication that different game design elements apply in a different degree to gender [50]. A conclusion of the above could be that men and women may find different game mechanics and game design techniques more or less appealing which probably affects their engagement in the gamified application.

Diversity in gamification is broad. Here the topics of culture, age and gender are explored to some extent nevertheless there is more topics in this category that can affect the engagement like socioeconomic status or interest. As mentioned, the presented topics deserve a study of their own and should be considered as hypothesis generating rather than hypothesis testing.

In designing gamification, one should also be aware of the fact that variables such as gender, age, and cultural orientations can play a role in variance in the reception of gamified application.

## 5 Conclusion

The use of gamification can be unethical if the decision-maker loses sight of why their action is desirable. Exploitation can lead users to become enamored with points, badges and leaderboards, rather than the reasons why something is good to do, thereby putting their action at ethical risk. Harms related to how professionals should not to blindly resort to achievements (or points, levels and leaderboards for that matter), because they could stifle users' intrinsic motivation, that is, their desire to engage with a system. Character in terms of "achievements"—recognition for completing minor, secondary or non-essential tasks or goals that do not inherently affect the system's outcome—are a staple tool to reward users for accomplishments and character building.

This article annotates the areas for future work and provides a grounding for the interpretation of proper gamification related to the issues of ethics and diversity. Finally, our perspectives on gamification, suggesting that professionals should refocus on the development of a wider, experience-centered toolbox that move beyond the application of traditional game elements to equip both the researchers and professionals with broader means of creating more meaningful experiences.

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